stry, but also by power plants. On the whole, however, brown coal and peat have no great importance for Ukraine. 316

7. Petroleum and Gas

The petroleum industry was founded in Galicia about the middle of the 19th century. In 1909 Galicia (yearly production of 2 million t) contributed 5 % of the world production of petroleum and ranked third. But an uninterrupted decline set in, so that in 1937 its figure of 510 000 t was only 16th in world production. 382 ●

The reason for this decline was the splitting up of landed property and backward methods of production. Some of the 25 refineries were on Polish territory. The crude oil is transported by rail. As the high paraffin content of Galician oil causes obstruction in pipes and as the oilfields are far from the sea and the market for this oil is in Central Europe, there has been no attempt to lay pipe lines.

In the Kuban area the figure for petroleum production was only 150 000 t in 1912, but this increased under the two first Five Year Plans to 1.8 million t in 1937. Since 1900 the petroleum is conducted by pipe from Maikop to Krasnodar, the pipe being 108 km long and able to send 900 000 t a year. In 1928 it was connected with the main pipe which is 618 km long and connects the Groznyj oil-field with Tuapse, a growing harbor on the Black Sea.

Since 1893 oil-wells have been bored in Groznyj. Shortly before World War I, these wells produced 1.2 million t, and in 1925 double as much, under the first Five Year Plan almost 7 million t yearly, under the second 3.7 million t. These varying yields testify to the wealth of oil, but also to the ruthless methods of exploitation, especially where oil is allowed to spurt out in jets. 315

In the Kuban area and in Groznyj oil refineries are equipped on modern lines. In the thirties ¾ of the entire petrol requirements of Russia were supplied from this area. Pipe lines also connect Groznyj with Mahach Kala on the Caspian Sea, 382 315

Table 11. Production of Petroleum in

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	1880	1885	1890	1895	1900	1901	1902	1903	1904	1905
Galicia	32	65	92	215	326	452	576	728	830	802
Maikop	—	18	30	22	4	5	7	5	—	1
Groznyj	—	—	—	463	500	573	527	537	660	707
Ukraine	32	83	122	700	830	1030	1110	1270	1490	1510
Russian Empire and Austria	590	1950	3720	6870	10700	12000	11600	11000	11600	8300
% of Ukraine	5½	4¼	3¼	10¼	7¾	8½	9½	11½	13	18¼

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Galicia	765	705	715	736	770	813	796	720	745	675
Maikop	18	45	51	44	46	77	72	80	105	155
Groznyj	1207	1440	1504	1640	2014	2410	3022	3360	3690	4570
Ukraine	1990	2190	2270	2420	3830	3300	3890	4160	4540	5400
Soviet Union and Poland	4300	5300	6000	6800	7100	8800	9700	11300	12300	14400
% of Ukraine	46¼	41¼	37¾	35½	54	40¾	40	36¾	37	37½

315 with Armavir (490 km) and thence with Trudova in the Donets Basin (468 km). There is a plan to extend the lines to Dnipropetrovske (242 km).

In 1937 the petroleum produced in Ukraine, including Groznyj, amounted to 5 million t = 2 % of world production.

It is only Galicia that possesses any appreciable quantities of natural gas. During the thirties, production rose to about ½ million cubic meters, the greater part of which was used in the manufacture of gasoline. The longest pipes are from Dashava to Boryslav and Lviv.

8. Chemical Industry and the Production of Salt

385 The chief products of the chemical industry which grew rapidly during the First World War are acids (e. g. sulphuric acid) and bases, soda and artificial manure. In 1934 in Dnipro-Ukraine there were 103 plants employing 28 650 workers, 14 of these plants (12 730 workers) being big businesses. In Western

Ukraine (1838—1937 in 1000 t and %)

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1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
770	1126	1724	2086	1763	1458	1187	1114	880	750	900	860	820
1	2	3	13	23	129	152	88	74	135	45	58	80
629	642	853	931	1214	1233	1071	1288	1446	1435	1715	1782	610
1400	1770	2580	3030	3000	2820	2410	2490	2400	2320	2660	2700	1510
8900	9700	10400	11300	11500	10700	10500	10300	10100	10100	10900	9700	4400
15¾	18¼	25	26¾	26	26¼	21	24¼	23¾	23	24½	28	34¼

1930	1931	1932	1933	1934	1935	1936	1937	—	20-23	24-28	29-32	33-37
663	631	557	551	530	515	511	500	—	730	770	640	520
462	959	1015	769	1160	1335	1162	1480	—	40	90	640	1180
6955	7700	8078	5160	3520	3300	3447	3000	—	1450	2940	6820	3700
8080	9290	9650	6480	5210	5250	5120	4980	—	2220	3800	8100	5400
19300	22100	22900	22000	24600	25600	27900	27800	—	5600	9700	19700	25600
41	42	42	29½	21¼	20½	18½	18	—	39½	39	41	21½

Ukraine in 1932 there were 115 small concerns employing 2 700 workers. 385

In 1913 about 950 000 t salt were produced (540 000 t rock salt, 200 000 t common salt, 210 000 brine salt). This figure was double for 1934 (7th in world production) but it was differently distributed (135 000 common salt, 225 000 brine salt, the rest rock salt). 317

Potash production in Ukraine in the years 1924—1932 reached 305 000 t with a K_2O content of 58 000 t which secured the third place in world production (The corresponding figures for Germany were 9.9 and 1.1 million t, for France 2.5 and 0.4 million t). 385

Big-scale chemical production was concentrated partly in the Donets Basi[illegible] and recently also round the Dnipro power plant. Sulp[illegible]c acid was produced at Konstantynivka (the main plant of the USSR with a production capacity of 30 000 t) and some smaller factories. In 1934, 350 000 t were produced (45 % of the total Russian production). Superphosphates were

Zaporojie, Ielisavetgrad (region of Odessa), Berdiansk (on the Sea of Azov), and Kherson (at the mouth of the Dnieper).

The marine docks in which the ships of commerce and of war are being built are at Nicolaiev (at the mouth of the Boug), and river constructions of all types at Kiev. There are important repair shops for railway stock at Odessa and Kiev.

We enumerate here only the districts in which the larger metal industries are concentrated, the production of which exceeds local needs. The greater part of the large Ukrainian towns, especially of the seaports, possess small metal factories, the total production of which is not negligible.

It suffices to consult the economic map[1] of the Ukraine to realize that the heavier the products of the metal industry are, the more its centres are removed from the mining regions, a fact which gives a clearly rational character to the geography of Ukrainian metallurgy.

Besides metallurgy, heavy industry is represented in the Ukraine by the chemical industry and in the first instance by that which is based on coal. Such is the industry which produces azote, benzole, nitro-benzine, and sulphuric acid. Important factories engaged in the production of volatile materials have been built at Gorlovka, Lissitschansk, Konstantinovka, and Slaviansk (in the Donbass). This industry, which is still in its very early stages, already meets 30 per cent of the needs of Soviet Ukraine.

The factories producing superphosphates, whose annual production reaches 250,000 tons, are distributed between Konstantinovka (Donbass), Odessa, and Vinnitza, in Podolia.

Kharkov possesses great dye factories and those producing paints, varnish, and enamel.

[1] [see category 116, p. 151---Analyst]

9: Prothero G-4 (no date) 1920 RD1 Ukraine RD1

there are several large factories which specialize in every kind of machine necessary for the sugar industry.

Several other industries, while of small account in comparison with those described above, deserve mention.

Manufacturing enterprises dependent upon animal products divide themselves principally into tanneries and woollen factories. The centres of the leather industry lie in the northern portion of the country, especially in the Governments of Kharkov, Poltava, Chernigov, and Podolia. This industry accounts for 4·5 per cent. of the total manufacturing output of the Ukraine. The woollen industry is centred in Kharkov, which has two large cloth mills, and in the town of Klintsi in the Government of Chernigov, where not only cloth but knitted goods, yarns, rugs, shawls, and other woollen goods are turned out from eight considerable factories. The production of woollen goods represents 3·5 per cent. of the total Ukraine output of manufactures.

The timber-working industry is chiefly found in the riparian towns, especially on the Dnieper. Yekaterinoslav takes first place, and Kremenchug, Alexandrovsk and Kherson also have saw-mills. Much of the timber shipped abroad is in an unworked state, and manufactures of the better sort are poorly represented. The industry accounts for only 4 per cent. of the value of the Ukraine manufactures.

The chemical industry is of minor importance. It is concerned chiefly with the products and by-products of coal gas at Odessa and Kharkov, but there is also a soda factory in the Bakhmut district and there are a number of match-factories in the Novozibkovsk district of Chernigov. The products of the industry represent only 3·5 per cent. of the value of the manufactures of the Ukraine. None of the more advanced branches of the industry is established in the country.

The industries enumerated account for 90–95 per cent. of the manufactures of the country. The remainder, grouped under the headings of paper, linen, cotton, and fibre industries, are of negligible account.

135 To the south-east, in the Don and northern Donets valleys,
654 geologists have discovered a number of new coal-bearing areas, and have confirmed that the Donets Basin coal layers stretch far to the east and south.

Other investigations of coal-bearing areas are to begin shortly, particularly around the Azov Sea coast and in other regions bordering the Donets Basin.

Coke

316 The coke output of the Ukrainian S.S.R. in 1950 is planned to be 15,500,000 tons.

Natural Gas and Oil

315 With the incorporation of Western Ukraine in 1939, the Ukrainian
185 S.S.R. came into possession of oil producing regions. The Five-Year Plan calls for the intensive development of these and other areas of the Ukraine for the increased production of oil and natural gas.
[654] Three hundred and twenty-five wells are to be located to add to the petroleum resources of the western regions; prospecting for commercial deposits of petroleum in the Romny area is to be completed; and there is to be extensive geological exploration for natural gas in the Dragobych Region (Western Ukraine) and on the Azov and Black Sea coasts.

[382] The total output of petroleum in the Ukrainian S.S.R. in 1950 is fixed by the Five-Year Plan at 325,000 metric tons.

The plan also provides for the building of a gas pipeline from Dashava to Kiev. Already in process of construction, the first section of the pipeline will be completed this year (1947) and will supply gas to more than 30,000 flats and several large industrial plants in Kiev.

Electric Power Stations

377 Electrification has been one of the outstanding features of the Soviet economy. Before the war the Ukrainian Republic possessed a wide network of electric power stations. Best known was the huge Dnieper Dam and Lenin Hydro-electric Station, completed in 1932 near Zaporozhie. This station supplied electric power to a great industrial region: in the north the steel mills of Dniepropetrovsk and Dnieprodzerzhinsk, and to the south-east, the Nikopol manganese mines. These three industrial centres developed quickly after the Dnieper Dam was built; and the abundance of cheap power available from it also gave rise to the growth of a metal and machine-building centre at Zaporozhie.